

unregulated species movements in Scotland. However, it is hoped that recent legislation by the Scottish parliament, the Aquaculture and Fisheries (Scotland) Bill 2007 (Scottish Parliament, 2007), will prevent, or at least reduce, the number of such movements. In future, it will be illegal in Scotland to move any species of fish from one water body to another without a licence. The use of fish as live bait is prohibited, which is believed to be one of the main ways in which alien fish species, such as ruffe, became established in Scottish waters.

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Large shark species in northern Scottish waters

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On 15 July 2003 I was fishing for codling off the east Caithness coast near my home-port of Lybster. With nets already deployed in a calm sea, as I approached them I could see two fins above the surface, well apart and some disturbance in the water. Thinking two dolphins had maybe become entangled, I quickly tried to approach the net and release the animals. To my surprise the net contained a large species of shark and the fins represented the dorsal fin and the tail tip, which had a notch to it. The upheaval went on for perhaps three or four minutes, before the shark set off in a south-westerly direction for about 200 meters, dragging the net and boat backwards, but it rapidly appeared to tire. It was still struggling, but soon became much more subdued. The shark was well entangled and had presumably gone for a fish that was also in the net at the same time. At first I thought it was probably a Basking Shark *Cetorhinus maximus*, with which I am very familiar, having fished these waters most of my life. I estimated the fish to be at minimum the length of my small boat, which is around 5.5 meters (18 feet). I was able to haul up about 2/3 of the net, cutting it when I got too close. Then the shark started to slowly go down, (I had a rope attached to the net). Water depth would be about approximately 30 metres (90 feet) at that point.

When it reached the bottom, it appeared to lie there so I decided to try towing the net to see if it would free itself. I did make headway although was sometimes stopped and pulled astern. It was a tow of perhaps 300 meters to the nearby cliff face and there I dropped an anchor and buoy in about 15 metres (45feet) of water. The shark was still totally submerged as it was all during the tow.

I returned to Lybster to consider what had to be done and on the way back met Dod Bremner, a friend who readily volunteered to help me free the creature and recover my net.

On return to the spot off the cliffs the shark was now back on the surface – gills and dorsal plainly visible and quite placid – in fact showing little sign of life. I took my new digital camera to photograph the shark and managed just one shot as Dod was at the net. (Fig. 1). Suddenly there was an explosion of movement and the shark very rapidly shot away from the boat, free of the net.

Both Dod and myself agreed that the shark was no "muldoan"- a local name for Basking Shark. It was a shark we had never seen before in these waters. I saw enough of the tail to eliminate Thresher Shark *Alopius vulpinus*, and Porbeagle *Lamna nasus* never reach this size. The gill rakers visible were also much smaller than those of Basking Shark. The shark was broad-headed and the steely-grey dorsal surface was smooth, unlike that of Basking Shark. The eye was dark, but we were unable to check the ventral colour of the shark because of its size and weight and the fact that it was swathed in netting.

Having checked through many books and guides we concluded that it was possibly a Great White Shark *Carcharodon carcharias*, but could not be 100% certain. However the presence of a large shark species in northern Scottish waters is perhaps worth recording. There have been anecdotal reports and descriptions of this species in British waters in recent years including off Cornwall and the Hebrides but none are officially accepted.

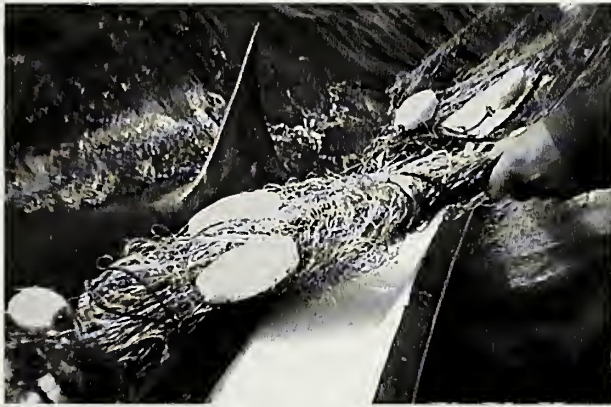


Fig. 1. Large shark caught in fishing gear off the east Caithness coast on 15 July 2003.

Ravens stick-gathering at a potential nesting site within the Glasgow city boundaries

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The hostility often shown towards ravens *Corvus corax* L. because of their alleged destructiveness towards new-born lambs and young game birds has a long history, the persecution of the birds becoming particularly effective following the development of modern firearms in the 19th century. From being a once common species in both town and country, the raven became restricted to the remoter hills and mountains. In more modern times numbers fell still further through the combined effects of blanket conifer planting of large tracts of the uplands, changes in animal

husbandry leading to a reduction in the availability of sheep carrion, and by falling victim to the laying-out of poison baits to control foxes (Mitchell, 1981). As a result, in some of the southern and central counties of Scotland ravens ceased to breed altogether (Thom, 1986).

Within the writer's study area covering the foothills between the north side of Glasgow and the Highland Line, a slow recovery in the local raven population first became apparent towards the end of the 1980s. By the mid 1990s most of the vacant traditional nesting sites in the Kilpatrick, Campsie and Fintry Hills had been re-occupied, with seemingly surplus birds prospecting new territories in the district (Mitchell, 1994). One such pair established themselves at the still worked Dumbuck Quarry, the nest site/s directly overlooking the busy Dumbarton Boulevard (Mitchell, 2000). Even with such close proximity to human presence, to date these birds have successfully reared young at Dumbuck every year for at least ten seasons. On the Renfrewshire side of the River Clyde ravens are similarly extending their breeding range towards the urban areas, not only utilising quarry faces but electricity pylons (Gibson, 2007).

In the early spring of 2007 word was received that a pair of ravens had been seen carrying sticks to the outer cage-work to a pair of huge gasometers dominating the skyline at Temple within the Glasgow city boundaries (Fig. 1). Despite being surrounded by housing estates, a railway line and a canal towpath – well used by walkers, joggers and cyclists alike - the Temple gas storage installation is secure against intrusion and disturbance from outside. During personal visits to the site over the next few weeks, observations made from just outwith the high perimeter fence confirmed that a pair of ravens was indeed regularly present, although as far as I was able to ascertain their stick-gathering activities came to very little.



Fig. 1. The structure of the outer cages to the two gasometers at Temple in Glasgow offers many convenient niches where a pair of ravens could build a nest.

Ravens do not normally breed until they are at least three years old (Ratcliffe, 1997), so that it is possible